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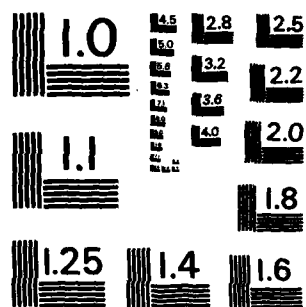
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) In justification of programs requested, this document, in separate volume for each of the five Procurement Appropriations, provides backup data for the Army Budget submission for FY 1984. Included are Summaries of Requirements, Program and Financing Statements and Selected Data Sheets. (These volumes are unclassified).		

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DEPARTMENT OF THE ARMY  
MISSILE PROCUREMENT, ARMY

JUSTIFICATION OF ESTIMATES FOR FISCAL YEARS 1984, 1985

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2-1 January 1983

MISSILE PROCUREMENT, ARMY

Section 1

Budget Appendix Extract

Language

Program and Financing Schedule

Object Classification Schedule

2-1 January 1983

APPROPRIATION LANGUAGE

For construction, procurement, production, modification, upgrade, and modernization of missiles, equipment, including ordnance, ground handling equipment, spare parts, and accessories therefor; specialized equipment and training devices; expansion of public and private plants, including the land necessary therefor, without regard to section 4774, title 10, United States Code, for the foregoing purposes, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title as required by section 355, Revised Statutes, as amended; and procurement and installation of equipment, appliances, and machine tools in public and private plants, reserve plant and Government and contractor-owned equipment layaway; and other expenses necessary for the foregoing purposes: \$2,287,000,000 of which \$422,100,000 shall be available only for purchase of the Multiple Launch Rocket System under a multiyear contract, \$3,088,500,000 to remain available for obligation until September 30, 1986. (10 U.S.C. 2353, 2361, 3012, 1531-32; Department of Defense Appropriation Act, 1983; additional authorizing legislation to be proposed).

2-2 January 1983

Army

## Missile Procurement, Army

31 Jan 83

		Program and Financing (in thousands of dollars)			Summary		
Identification code	21-2032-0-1-051	Budget plan (amounts for procurement actions programmed)			Obligations		
		1982 actual	1983 est.	1984 est.	1982 actual	1983 est.	1984 est.
Program by activities:							
Direct:							
2.	Other missiles	1,512,272	1,649,650	2,555,000	1,763,688	1,733,452	2,431,483
3.	Modification of missiles	297,957	91,900	123,300	342,810	146,457	140,656
4.	Spares and repair parts	243,900	219,050	316,600	244,014	250,001	333,669
5.	Support equipment and facilities	77,216	166,600	113,600	73,692	110,113	106,975
Total direct		2,131,345	2,296,600	3,088,500	2,424,494	2,240,023	3,012,765
Reimbursable program		475,151	331,400	195,480	462,916	310,627	236,226
10.0001	Total	2,606,496	2,598,000	3,283,980	2,887,400	2,550,650	3,251,215
Financing:							
Offsetting collections from:							
11.0001	Federal funds	-215,523	-266,000	-112,000	-206,716	-266,000	-112,000
13.0001	Trust funds	-272,472	-65,400	-65,400	-247,507	-65,400	-63,400
14.0001	Non-federal sources	-1			-1		
17.0001	Recoveries of prior year obligations(-)				-392,662		
Unobligated balance available, start of year:							
21.4001	For completion of prior year budget plans				-367,571	-446,625	-484,195
21.4002	Reprogramming from or to prior year budget plan	-15,732					
24.4001	Unobligated balance available, end of year				446,625	484,196	526,662
25.0001	Unobligated balance lapsing	15,732			15,732		
36.0001	Budget authority	2,116,500	2,296,600	3,088,500	2,116,500	2,296,600	3,088,500
Budget authority:							
40.0001	Appropriation	2,131,200	2,287,000	3,088,500	2,131,200	2,287,000	3,088,500
40.0002	Reduction pursuant to P.L. 97-377		-20,400			-20,400	
41.0001	Transferred to other accounts(-)	-12,700			-12,700		
49.0001	Appropriation (adjusted)	2,116,500	2,266,600	3,068,500	2,116,500	2,266,600	3,068,500
Relation of obligations to outlays:							
71.0001	Obligations incurred, net				2,433,178	2,219,230	3,095,613
72.4001	Obligated balance, start of year				1,478,949	2,264,009	2,616,439
74.4001	Obligated balance, end of year				-2,264,009	-2,616,439	-3,306,552
77.0001	Adjustments in expired accounts				13,059		
78.0001	Adjustments in unexpired accounts				-292,662		
80.0001	Outlays				1,268,507	1,666,600	2,363,700

2-3 January 1983

Army

Missile Procurement, Army

31 Jan 83

Object Classification (in thousands of dollars)

Summary

Identification code	21-2032-0-1-051	1982 actual	1983 est.	1984 est.
<hr/>				
Direct obligations:				
Other services:				
128.004	Other	380,048	449,332	547,442
128.001	Supplies and materials	1,639,070	1,103,415	1,629,320
131.001	Equipment	535,366	587,256	537,223
199.001	Total direct obligations	2,424,484	2,240,003	3,012,985
<hr/>				
Reimbursable obligations:				
Other services:				
228.004	Other	74,058	59,342	41,325
228.001	Supplies and materials	275,593	160,526	133,699
231.001	Equipment	113,265	90,757	63,204
299.001	Total reimbursable obligations	462,916	310,627	238,228
999.001	Total obligations	2,887,400	2,550,630	3,251,213

2-4 January 1983

Army

Missile Procurement, Army

31 Jan 83

Program and Financing (in thousands of dollars)				1980 Fiscal year program			
Identification code	21-2032-0-1-051	Budget plan (amounts for procurement actions programmed)			Obligations		
		1982 actual	1983 est.	1984 est.	1982 actual	1983 est.	1984 est.
Program by activities:							
Direct:							
	2. Other missiles	.....	.....	.....	91,021	.....	.....
	3. Modification of missiles	.....	.....	.....	4,581	.....	.....
	4. Spares and repair parts	.....	.....	.....	21,012	.....	.....
	5. Support equipment and facilities	.....	.....	.....	925	.....	.....
	Total direct	.....	.....	.....	117,539	.....	.....
	Reimbursable program	.....	.....	.....	20,768	.....	.....
10.0001	Total	.....	.....	.....	138,307	.....	.....
Financing:							
Offsetting collections from:							
11.0001	Adjustment to prior year federal fund order	.....	.....	.....	3,154	.....	.....
13.0001	Adjustment to prior year trust fund orders	.....	.....	.....	4,478	.....	.....
17.0001	Recoveries of prior year obligations(-)	.....	.....	.....	-95,190	.....	.....
	Unobligated balance available, start of year:	.....	.....	.....		.....	.....
21.4001	For completion of prior year budget plans	.....	.....	.....	-88,511	.....	.....
21.4002	Reprogramming from or to prior year budget plan	-18,782				.....	.....
28.0001	Unobligated balance lapsing	18,782			18,782	.....	.....
40.0001	Budget authority	.....	.....	.....	.....	.....	.....

2-5 January 1983

Army

Missile Procurement, Army

31 Jan 83

Program and Financing (in thousands of dollars)

1981 Fiscal year program

Identification code	21-2032-0-1-051	Budget plan (amounts for procurement actions programmed)			Obligations		
		1982 actual	1983 est.	1984 est.	1982 actual	1983 est.	1984 est.
Program by activities:							
Direct:							
2.	Other missiles	.....	.....	.....	304,604	24,963	.....
3.	Modification of missiles	.....	.....	.....	117,655	2,022	.....
4.	Spares and repair parts	.....	.....	.....	30,501	10,053	.....
5.	Support equipment and facilities	.....	.....	.....	4,384	2,530	.....
Total direct		.....	.....	.....	457,144	39,568	.....
Reimbursable program		.....	.....	.....	73,278	18,435	.....
10.0001	Total	.....	.....	.....	530,418	58,003	.....
Financing:							
Offsetting collections from:							
11.0001	Adjustment to prior year federal fund orders	.....	.....	.....	5,653	.....	.....
13.0001	Adjustment to prior year trust fund orders	.....	.....	.....	20,487	.....	.....
17.0001	Recoveries of prior year obligations(-)	.....	.....	.....	-295,502	.....	.....
21.4001	Unobligated balance available, start of year	.....	.....	.....	-319,060	-58,003	.....
24.4001	Unobligated balance available, end of year	.....	.....	.....	58,003	.....	.....
40.0001	Budget authority	.....	.....	.....	.....	.....	.....

2-6 January 1983

Army

Missile Procurement, Army

31 Jan 83

Program and Financing (in thousands of dollars)

1982 Fiscal year program

Identification code	21-2032-0-1-001	Budget plan (amounts for procurement actions programmed)			Obligations			
		1982 actual	1983 est.	1984 est.	1982 actual	1983 est.	1984 est.	
<b>Program by activities:</b>								
<b>Direct:</b>								
2.	Other missiles	1,512,272			1,358,043	122,702	21,527	
3.	Modification of missiles	297,957			220,674	65,365	11,916	
4.	Spare and repair parts	243,500			192,501	41,843	9,756	
5.	Support equipment and facilities	77,216			58,583	5,553	3,050	
	<b>Total direct</b>	<b>2,131,345</b>			<b>1,849,801</b>	<b>235,293</b>	<b>46,251</b>	
	Reimbursable program	475,151			368,873	59,658	16,610	
10.0001	<b>Total</b>	<b>2,606,496</b>			<b>2,218,674</b>	<b>324,951</b>	<b>62,861</b>	
<b>Financing:</b>								
<b>Offsetting collections from:</b>								
11.0001	Federal funds	-215,523			-215,523			
13.0001	Trust funds	-272,472			-272,472			
14.0001	Non-federal sources	-1			-1			
21.4001	Unobligated balance available, start of year					-387,622	-62,861	
24.4001	Unobligated balance available, end of year				387,622	62,861		
39.0001	<b>Budget authority</b>	<b>2,118,500</b>			<b>2,118,500</b>			
<b>Budget authority:</b>								
40.0001	Appropriation	2,131,200			2,131,200			
41.0001	Transferred to other accounts(-)	-12,700			-12,700			
43.0001	<b>Appropriation (adjusted)</b>	<b>2,118,500</b>			<b>2,118,500</b>			

2-7 January 1983

Army

## Missile Procurement, Army

31 Jan 83

## Program and Financing (in thousands of dollars)

1983 Fiscal year program

Identification code	21-2032-0-1-051	Budget plan (amounts for procurement actions programmed)			Obligations			
		1982 actual	1983 est.	1984 est.	1982 actual	1983 est.	1984 est.	
<b>Program by activities:</b>								
<b>Direct:</b>								
2.	Other missiles		1,849,850			1,585,787	241,233	
3.	Modification of missiles		91,900			78,050	10,230	
4.	Spare and repair parts		219,050			188,305	20,663	
5.	Support equipment and facilities		105,800			102,000	3,200	
	<b>Total direct</b>		<b>2,266,600</b>			<b>1,955,142</b>	<b>275,326</b>	
	<b>Reimbursable program</b>		<b>331,400</b>			<b>201,524</b>	<b>84,638</b>	
10.0001	<b>Total</b>		<b>2,598,000</b>			<b>2,156,666</b>	<b>360,164</b>	
<b>Financing:</b>								
<b>Offsetting collections from:</b>								
11.0001	Federal funds		-286,000			-286,000		
13.0001	Trust funds		-85,400			-85,400		
21.4001	Unobligated balance available, start of year						-431,334	
24.4001	Unobligated balance available, end of year					431,334	71,170	
39.0001	<b>Budget authority</b>		<b>2,266,600</b>			<b>2,266,600</b>		
<b>Budget authority:</b>								
40.0001	Appropriation		2,287,000			2,287,000		
40.0002	Reduction pursuant to P.L. 97-377		-20,400			-20,400		
43.0001	Appropriation (adjusted)		2,266,600			2,266,600		

2-8 January 1983

Army

Missile Procurement, Army

31 Jan 83

Program and Financing (in thousands of dollars)

1984 Fiscal year program

Identification code	21-2032-0-1-051	Budget plan (amounts for procurement actions programed)			Obligations		
		1982 actual	1983 est.	1984 est.	1982 actual	1983 est.	1984 est.
<b>Program by activities:</b>							
<b>Direct:</b>							
2.	Other missiles			2,535,000			2,168,723
3.	Modification of missiles			123,300			118,510
4.	Spare and repair parts			318,600			303,450
6.	Support equipment and facilities			113,600			100,725
<b>Total direct</b>				<b>3,088,500</b>			<b>2,691,408</b>
<b>Reimbursable program</b>				<b>196,400</b>			<b>136,780</b>
10.0001	<b>Total</b>			<b>3,285,900</b>			<b>2,828,188</b>
<b>Financing:</b>							
<b>Offsetting collections from:</b>							
11.0001	Federal funds			-112,000			-112,000
12.0001	Trust funds			-83,400			-83,400
24.4001	Unobligated balance available, end of year						458,712
40.0001	Budget authority			<b>3,088,500</b>			<b>3,088,500</b>

2-9 January 1983

**MISSILE PROCUREMENT, ARMY**

**Section 4**

**Budget Activity Justification**

**Activity 2 - Other Missiles**

**Activity 3 - Modification of Missiles**

**Activity 4 - Spares and Repair Parts**

**Activity 5 - Support Equipment and Facilities**

**2-10 January 1983**

Department of the Army Annual Budget Estimates JUSTIFICATION	Appropriation		FY 1984	
	Missile Procurement, Army		Budget	
Program or Budget Project Account	(Thousands of Dollars)			
Activity 2 - Other Missiles	Actual	Estimate	Estimate	Estimate
	FY 1982	FY 1983	FY 1984	FY 1985
Direct Obligation or Direct Budget Plan	\$1,512,272	\$1,849,850	\$2,535,000	\$3,035,900

#### Section 1 - PURPOSE AND SCOPE

Provides for procurement of surface-to-air, antitank/assault, surface-to-surface and air-to-surface missile systems; related ground support equipment; and initial issue and replacement of losses consumed in reliability firings, crew proficiency firings, and other training activities.

#### Section 2 - JUSTIFICATION OF FUNDS REQUESTED

##### CHAPARRAL MISSILE SYSTEM (Pl Line Item No. 1)

(\$ in Thousands)	
FY 1984	FY 1985
-	\$3,200

\$3.2 million is requested in FY 1985 for long-lead items in support of TOWED CHAPARRAL fire units for the Light Divisions.

##### Other Missile Support (Pl Line Item No. 4)

(\$ in Thousands)	
FY 1984	FY 1985
\$9,200	\$9,300

\$9.2 million in FY 1984 procures 541 replacement HAWK rocket motors. The FY 1985 requirement is 525 replacement rocket motors at a cost of \$9.3 million.

2-11 January 1983

Patriot Missile System (Pl Line Item No. 5)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$992,000	\$1,175,700

\$992.0 million of this request in FY 1984 is for 525 missiles and 15 fire units. In FY 1985 \$1175.7 million is requested for procurement of 815 missiles and 17 fire units. PATRIOT is an improved system which will replace NIKE-HERCULES and some HAWK batteries and is specifically designed to defeat the advanced air threat of the 1980's and beyond. Procurement began in FY 1980 and will continue thru FY 90. IOC will be achieved in CONUS in 1983 and in Europe in 1984.

STINGER MISSILE SYSTEM (Pl Line Item No. 6)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$137,800	\$345,700

\$137.8 million is requested for the procurement of 1508 STINGER missiles in FY 1984 and \$345.7 million for 2610 missile systems in FY 1985. The STINGER is a manportable air defense missile system that provides self-defense to forward deployed, company size combat units. A value engineering project resulted in a cost avoidance of \$.200 thousand which demonstrate how much higher the Army's budget plan would have been without this Economics, Efficiencies and Management Improvement action.

LASER HELLFIRE SYSTEM (Pl Line Item No. 7)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$238,800	\$235,700

\$238.8 million is requested in FY 1984 and \$235.7M in FY 1985 to procure 5351 and 6026 HELLFIRE missiles and associated equipment respectively. This will also buy 107/134 training missiles (inert missiles with live seekers for air crew training) and 315/360 dummy missiles (completely inert rounds used for ground crew training and aircraft weight and balance during flight). The purpose of the HELLFIRE missile system is to defeat the current and future armor threat at stand-off ranges. Mounted on the AH-64 helicopter, it will increase survivability and fire power.

2-12 January 1983

**TOW MISSILE SYSTEM** (Pl Line Items No. 8 and 9)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$217,400	\$233,100

The FY 1984 budget request of \$189.2 million will procure 18,000 TOW-2 missiles and ground support equipment and 18,000 TOW-2 missiles at a cost of \$210.1 in FY 1985. The TOW-2 system is an upgrade of the Basic TOW which was originally fielded in 1970. The TOW-2 missile is designed to defeat current and future enemy armored vehicles.

In addition, \$28.2 million advance procurement funding is requested in FY 1984 to facilitate and procure long leadtime TOW-2 missile components in order that the TOW-2 missile production can be surged to 3500 per month within 6 months of go-ahead. \$23.0 million is requested in FY 1985 to complete procurement of TOW-2 missile components for the surge capability.

**PERSHING** (Pl Line Item No. 10)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$407,700	\$431,400

\$407.7 million is requested to procure 95 missiles and associated ground support equipment in FY 1984 and \$431.4 million for 104 missiles and associated ground support equipment in FY 1985. PERSHING II will replace the PERSHING Ia missile in Europe.

**MULTIPLE LAUNCH ROCKET SYSTEM (MLRS) (MYP)** (Pl Line Item No. 11)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$418,000	\$464,400

\$418.0 million is requested to procure 36,000 rockets and associated ground support equipment in FY 1984. \$464.4 million is requested to procure 50,472 rockets and associated ground support equipment in FY 1985. The MLRS is a 227 millimeter diameter multiple launch rocket system with tracked self-propelled launcher/loader, disposable pods, and fire control equipment. Its mission is to neutralize or suppress enemy field artillery and air defense systems, and supplement cannon artillery when targets exceed capabilities during surge conditions.

2-13 January 1983

MLRS ADVANCE PROCUREMENT (MYP)(Pl Line Item No. 12)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$114,100	\$137,400

\$114.1 million is requested in FY 1984 and \$137.4 million is requested in FY 1985 to procure advance materials in economic order quantities as part of a multiyear procurement acquisition strategy for MLRS.

2-14 January 1983

Department of the Army  
Annual Budget Estimates  
**JUSTIFICATION**

**Appropriation**

**FY 1984**

**Missile Procurement, Army**

**Budget**

**Program or Budget Project Account**

(Thousands of Dollars)

**Activity 3 - Modification of Missiles**

**Direct Obligation or Direct Budget Plan**

Actual FY 1982	Estimate FY 1983	Estimate FY 1984	Estimate FY 1985
\$297,957	\$91,900	\$123,300	\$384,700

**Section 1 - PURPOSE AND SCOPE**

Provides for the modification of surface-to-air, surface-to-surface, and anti-tank missile systems.

**Section 2 - JUSTIFICATION OF FUNDS REQUESTED**

**PATRIOT MODIFICATIONS (P1 Line Item No. 13)**

(\$ in Thousands)	
FY 1984	FY 1985
-0-	\$23,800

\$23.8 million is requested in FY 1985 to provide an improved emplacement capability (land navigation system) to increase Patriot mobility and survivability. Retrofit of a digital processor to improve missile fuse performance against sophisticated electronic countermeasures is also included.

**CHAPARRAL MODIFICATIONS (P1 Item No. 14)**

(\$ in Thousands)	
FY 1984	FY 1985
\$12,400	\$202,600

\$12.4 million is requested in FY 1984 for procurement of pneumatic system air compressors, rocket motor insulators and smokeless rocket motors. \$202.6 million is requested in FY 1985 for procurement of Forward Looking Infrared (FLIR) night sights, smokeless rocket motors, electronics compartment cooling modification kits, upgraded master control panels, weapon display units and collective crew nuclear biological and chemical subsystems.

2-15 January 1983

HAWK MODIFICATIONS (Pl Line Item No. 15)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$31,200	\$84,900

\$31.2 million is requested in FY 1984 for the first year production buy of missile modification kits to improve the HAWK's missile's ability to destroy aircraft employing multiple blinking jammers (MBJ). In addition, factory tooling and test equipment will be procured to support the Phase III series of modifications to HAWK ground equipment. Phase III will improve the firepower, low altitude target engagement, and training capabilities of each fire unit, as well as, reduce operator and maintenance workloads. In FY 1985, \$84.9 million is required to complete the second and final year of MBJ kit production and initiate Phase III kit production.

FAAR MODIFICATIONS (P-1 Line Item No. 16)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
	\$26,400

\$26.4 million is requested to provide a digital automatic data processor. The improved data processor will increase radar simultaneous target handling capability and provide for automatic distribution of target information to short range air defense (SHORAD) weapon systems.

TOW MODIFICATIONS (Pl Line Item No. 17)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$72,500	\$35,600

\$72.5 million is requested in FY 1984 and \$35.6 million for FY 1985 to provide an adequate anti-armor capability within a current retrofittable envelope and increased performance and hardening against smoke/EOCM. This program modifies existing Basic TOW launchers to the TOW 2 configuration.

2-16 January 1983

MODIFICATIONS LESS THAN \$900,000 (Pl Line Item No. 19)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$700	-0-

\$ .7 million is requested in FY 1984 for Forward Area Alerting Radar (FAAR) Shop Maintenance Test Set reliability/maintainability upgrades.

AN/TSQ73 MODIFICATIONS (Pl Line Item No. 20)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$6,500	\$11,400

\$6.5 million is requested in FY 1984 and \$11.4 million in FY 1985 to provide additional memory capacity to the AN/TSQ 73 computer by replacing existing core memory with a complimentary metallic oxide silicon (CMOS) chip. Additional memory capacity is required for interoperability with Patriot, I HAWK, and various NATO Command and Control Systems.

2-17 January 1983

Department of the Army Annual Budget Estimates JUSTIFICATION	Appropriation			FY 1984
	Missile Procurement, Army			Budget
Program or Budget Project Account	(Thousands of Dollars)			
	Actual	Estimate	Estimate	Estimate
Activity 4 - Spares and Repair Parts	FY 1982	FY 1983	FY 1984	FY 1985
Direct Obligation or Direct Budget Plan	\$243,900	\$219,050	\$316,600	\$364,300

#### Section 1 - PURPOSE AND SCOPE

Provides for the procurement of initial provisioning, peacetime replenishment, and mobilization reserve of repairable major assemblies and repair parts for surface-to-air, air-to-surface, surface-to-surface, and antitank missile systems and support items.

#### Section 2 - JUSTIFICATION OF FUNDS REQUESTED

Required for the procurement of initial provisioning, peacetime replenishment, and mobilization reserve requirements of centrally managed, high dollar value depot repairable components, assemblies, and repair parts which are not carried in Army stock fund inventories.

#### INITIAL PROVISIONING (PI Line Item No. 21)

(\$ in Thousands)  
 FY 1984    FY 1985  
 \$201,500    \$214,400

Initial provisioning is requested to support the following major item procurements:

<u>System</u>	<u>FY84</u>	<u>FY85</u>
MLRS	19,500	18,100
Patriot	135,200	136,400
TSQ-73 MOD	1,400	
TOW MOD	12,900	5,200
Chaparral MOD	5,500	11,600
HAWK MOD	-	22,500
PERSHING II	25,100	13,800
Hellfire	1,900	2,300
Patriot MOD	-	4,500

2-18 January 1983

REPLENISHMENT REPAIR PARTS (Pl Line Item No. 21)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$115,100	\$149,900

\$115.1 million is requested in FY 1984 and \$149.9 million is requested in FY 1985 for peacetime replenishment repair parts.

2-19 January 1983

Department of the Army  
Annual Budget Estimates  
JUSTIFICATION

Appropriation

FY 1984

Missile Procurement, Army

Budget

Program or Budget Project Account	(Thousands of Dollars)			
	Actual	Estimate	Estimate	Estimate
Activity 5 - Support Equipment & Facilities	FY 1982	FY 1983	FY 1984	FY 1985
Direct Obligation or Direct Budget Plan	\$77,216	\$105,800	\$113,600	\$133,600

Section 1 - PURPOSE AND SCOPE

Provides for the procurement of support equipment, items less than \$900,000 and production base support for the Army missile systems.

Section 2 - JUSTIFICATION OF FUNDS REQUESTED

AIR DEFENSE TARGETS (Pl Line Item No. 22)

(\$ in Thousands)  
FY 1984    FY 1985  
\$12,500    \$16,000

\$12.5 million is requested in FY 1984 and \$16.0 million in FY 1985 for procurement of air defense target missiles, towed targets and ground support systems. This program provides target missiles for training of air defense personnel.

ITEMS LESS THAN \$900,000 (Pl Line Item No. 23)

(\$ in Thousands)  
FY 1984    FY 1985  
\$4,400    \$4,600

\$4.4 million is requested in FY 1984 and \$4.6 million in FY 1985 for procurement of tool and test sets peculiar to missile system maintenance and repair.

2-20 January 1983

PRODUCTION BASE SUPPORT (Pl Line Item No. 24)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$61,600	\$75,800

\$5.4 million is requested in FY 1984 and \$13.7 million is requested in FY 1985 for manufacturing methods and technology, and deals with the improvement of manufacturing techniques for various missile components. \$39.9 million in FY 1984 and \$49 million in FY 1985 is requested for Provision of Industrial Facilities consisting of providing replacement or new equipment used for production testing at White Sands Missile Range, rehabilitation/replacement of buildings at Government-owned, contractor operated (GOCO) facilities, and preparation of construction design criteria and specifications for submission to Corps of Engineers. \$16.3 million is requested in FY 1984 and \$12.3 million in FY 1985 for procurement of capital plant equipment required to support the depot maintenance mission.

OTHER PRODUCTION CHARGES (Pl Line Item No. 25)

(\$ in Thousands)	
<u>FY 1984</u>	<u>FY 1985</u>
\$35,100	\$37,200

\$35.1 million is requested in FY 1984 and \$37.2 million in FY 1985 for the procurement of test system/equipment to accomplish the quantity evaluation mission through stock surveillance, and evaluation of tactical weapon systems in stockpile.

2-21 January 1983

**MISSILE PROCUREMENT, ARMY**

**Section 5**

**Comparison of Program Requirements and Financing**

Comparison of FY 1983 program requirements as reflected in FY 1983 budget with FY 1983 program requirements as shown in FY 1984 budget.

Comparison of FY 1983 financing as reflected in FY 1983 budget with FY 1983 financing as shown in FY 1984 budget.

Comparison of FY 1982 program requirements as reflected in FY 1983 budget with FY 1982 program requirements as shown in FY 1984 budget.

Comparison of FY 1982 financing as reflected in FY 1983 budget with FY 1982 financing as shown in FY 1984 budget.

**2-22 January 1983**

**COMPARISON OF FY 1983 PROGRAM REQUIREMENTS  
AS REFLECTED IN FY 1983 BUDGET WITH  
FY 1983 PROGRAM REQUIREMENTS AS SHOWN IN FY 1984 BUDGET**

**SUMMARY OF REQUIREMENTS (in Thousands of Dollars)**

Appropriation:	Total Program Requirements Per FY '83 Budget	Program Requirements Per FY 1984 Budget	Increase (+) or Decrease (-)
Activity 1 - Antiballistic Missile System	-0-	-0-	-0-
Activity 2 - Other Missiles	\$ 2,400,300	\$ 1,849,850	\$ -550,450
Activity 3 - Modification of Missiles	93,000	91,900	- 1,100
Activity 4 - Spares and Repair Parts	233,300	219,050	- 14,250
Activity 5 - Support Equipment and Facilities	<u>120,000</u>	<u>105,800</u>	<u>-14,200</u>
TOTAL	\$ 2,846,600	\$ 2,266,600	\$ -580,000

Activity 2 - Other Missiles - (-\$550.5) - the following changes occurred:

Patriot - Decrease of \$26.0 million reflects Congressional ARM decoy reduction

TOW - Decrease of \$10.5 million due to Congressional pricing reduction

Pershing II - Reduction of \$498.3 million reflects Congressional action in deleting PERSHING procurement

Various - Decrease of \$15.7 million due to Congressional general reduction

2-23 January 1983

Activity 3 - Modification of Missiles (-\$1.1)

Various - Decrease of \$1.1 million due to Congressional general reduction

Activity 4 - Spares and Repair Parts (-\$14.2)

Various - Decrease of \$3.9 million due to Congressional general reduction

PERSHING II SPARES - Decrease of \$10.3 million due to Congressional reduction

Activity 5 - Support Equipment and Facilities (-\$14.2)

Air Defense Targets - Decrease of \$3.0 million due to Congressional level-of-effort reduction

Manufacturing Methods and Technology - Decrease of \$11.2 million due to Congressional reduction

2-24 January 1983

COMPARISON OF FY 1983 FINANCING AS REFLECTED  
IN THE FY 1983 BUDGET WITH FY 1983 FINANCING  
AS SHOWN IN FY 1984 BUDGET

(in Thousands of Dollars)

Appropriation:	Financing Per FY 1983 Budget	Financing Per FY 1984 Budget	Increase (+) or Decrease (-)
Program Requirements (Total)	3,100,700	2,598,000	-502,700
Program Requirements (Service Account)	(2,846,600)	(2,266,600)	(-580,000)
Program Requirements (Reimbursable)	(254,100)	(331,400)	(+ 77,300)
Less:			
Anticipated reimbursements	(254,100)	(331,400)	(+ 77,300)
Reprogramming from prior year budget plans			
Unobligated balance available from prior year to finance new budget plans			
Unobligated balance transferred from other accounts			
Add:			
Unobligated balance transferred to other accounts			
Unobligated balance available to finance subsequent year budget plans			
BUDGET AUTHORITY	2,846,600	2,266,600	-580,000
BUDGET AUTHORITY			
Appropriation	2,846,600	2,287,700	-559,600
Reduction pursuant to PL 97-377	-	-20,400	-20,400
Appropriation (Adjusted)	2,846,600	2,266,600	-580,000

EXPLANATION OF CHANGES IN FINANCING

The Fiscal Year 1983 program has decreased by \$502.7 million since submission of the Fiscal Year 1983 budget at Congress. Adjustments to financing categories are explained below:

1. Anticipated Reimbursements: \$77.3 million increase in Foreign Military Sales Program.
2. Budget Authority: Decrease of \$580.0 million due to Congressional reductions.

2-26 January 1983

COMPARISON OF FY 1982 PROGRAM REQUIREMENTS  
AS REFLECTED IN FY 1983 BUDGET WITH  
FY 1982 PROGRAM REQUIREMENTS AS SHOWN IN FY 1984 BUDGET

SUMMARY OF REQUIREMENTS (in Thousands of Dollars)

Appropriation:	Total Program Requirements Per FY 83 Budget	Program Requirements Per FY 1984 Budget	Increase (+) or Decrease (-)
Activity 1 - Antiballistic Missile System	-0-	-0-	-0-
Activity 2 - Other Missiles	\$ 1,514,000	\$ 1,512,272	\$ - 1728
Activity 3 - Modification of Missiles	305,000	297,957	- 7043
Activity 4 - Spares and Repair Parts	246,600	243,900	- 2,700
Activity 5 - Support Equipment and Facilities	<u>89,200</u>	<u>77,216</u>	<u>-11,984</u>
TOTAL	\$ 2,155,200	\$ 2,131,345	\$ -23,455

EXPLANATION BY ACTIVITY

Activity 2 - Other Missiles (-\$1.7) - Reflects increase of \$12.8 million for replacement of TOW FMS, decrease of \$16.9 million based on Congressional denial of inflation rate reprogramming actions and a \$2.4 million increase from BA 3.

Activity 3 - Modification of Missiles (-\$7.1) - Decrease of \$3.4 million reflects a reprogramming action for inflation rate increase which was included in FY82 and was denied by Congress, and \$3.7 million decrease transferred to BAs 2 and BA 5.

Activity 4 - Spares and Repair Parts (-\$2.7) - Decrease of \$2.7 million reflects inflation adjustment reprogramming request which was denied by Congress.

Activity 5 - Support Equipment and Facilities (-\$12.0) - Includes \$5.7 million that was transferred to Operation and Maintenance, \$1.0 million reprogramming increase denied by Congress, and \$7.0 million transferred to Military Personnel. In addition \$1.7 million increase transferred from BA 3.

2-27 January 1983

COMPARISON OF FY 1982 FINANCING AS REFLECTED  
IN THE FY 1983 BUDGET WITH FY 1982 FINANCING  
AS SHOWN IN FY 1984 BUDGET

(in Thousands of Dollars)

Appropriation:	Financing Per FY 1983 Budget	Financing Per FY 1984 Budget	Increase (+) or Decrease (-)
Missile Procurement, Army			
Program Requirements (Total)	\$ 2,870,700	\$ 2,606,496	\$ -264,204
Program Requirements (Service Account)	2,155,200	2,131,345	- 23,855
Program Requirements (Reimbursable)	715,500	475,151	-240,349
Less:			
Anticipated reimbursements	715,500	487,996	-227,504
Reprogramming from prior year budget plans			
Unobligated balance available from prior year to finance new budget plans			
Unobligated balance transferred from other accounts			
Add:			
Unobligated balance transferred to other accounts			
Unobligated balance available to finance subsequent year budget plans			
BUDGET AUTHORITY	2,155,200	2,118,500	- 36,700
BUDGET AUTHORITY			
Appropriation	2,131,200	2,131,200	0
Transferred from other Accounts	24,000		- 24,000
Transferred to other Accounts (-)		- 12,700	- 12,700
Appropriation (Adjusted)	2,155,200	2,118,500	- 36,700

2-28 January 1983

EXPLANATION OF CHANGES IN FINANCING

The Fiscal Year 1982 program has decreased \$264.2 million since preparation of the Fiscal Year 1983 budget to Congress. Adjustment to financing categories are explained below:

1. Anticipated Reimbursements: \$240.3 million decrease in Foreign Military Sales program.
2. Budget Authority: Decrease of \$23.9 million due to reprogramming.

2-29 January 1983

MISSILE PROCUREMENT, ARMY

Section 9

Modification of Missiles (Exhibit P-33)

<u>P-1 Numbers</u>	<u>Item Nomenclature</u>	<u>Page No.</u>
	MISSILE MODIFICATION PROGRAM	
13	PATRIOT	2 - 31
14	CHAPARRAL	2 - 32
15	HAWK	2 - 38
16	FAAR	2 - 42
17	TOW	2 - 43
19	MODIFICATIONS LESS THAN \$900,000	2 - 44
20	AN/TSQ 73	2 - 45

2-30 January 1983

**MISSILE MODIFICATION**  
**(\$ in Millions)**

**Appropriation:** Missile Procurement, Army

**Missile Type:** Patriot Air Defense Missile System

**Missile Modification Title:** Patriot Modifications

**Description/Justification:** Provides funding required to support retrofitting Patriot equipment in conjunction with the system planned product improvement program. Funds will add the following hardware enhancements to the Patriot weapon system: improved emplacement system (land navigation), improved digital fuze processor, multi-beam capability, improved clutter canceller and expanded computer memory. Implementation of these pre-planned improvements will greatly enhance system capabilities and survivability against the postulated threat response to the fielding of Patriot.

**Development Status:** The Patriot electronic counter counter measure (ECCM) development program was initiated in FY 1981. The effort is a preplanned product improvement program (P<sup>3</sup>I), and is supported by user requirements.

**Scope of Program:**

	FY 1983 Current Year		FY 1984 Budget Year		FY 1985 Budget Year +1		Future Years		Total Program	
	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
<b><u>PIP 1-82-03-1201</u></b>										
HIPA	0	0	0	0	0	23.8		352.2		376.0
RDTE	0	27.4	0	27.2	0	32.4		98.4		130.8
OMA	0	0	0	0	0	.006	0	1.143	0	1.149

**Basis for Cost Estimate:** Costs have been refined based on extensive development analysis and studies. Estimates originally based on cost of similar devices.

**Method of Implementation:** Land navigation will be accomplished by contractor field teams. The Patriot missile will be retrofitted with the improved fuze processor during the recertification cycle concurrent with return of missiles for replacement of shelf life components.

2-31 January 1983

MISSILE MODIFICATION  
( \$ in Millions )

Appropriation: Missile Procurement, Army

Missile Type: CHAPARRAL

Missile Modification Title:

Pneumatic System: 1-80-03-0309  
Rocket Motor Insulator: 1-83-03-0325  
Smokeless Rocket Motor: 1-83-03-0326  
Night Capability: 1-80-03-0306  
Master Control Indicator Panel: 1-82-03-0315  
Cooling Rear Compartments: 1-82-03-0320  
Weapons Display: 1-82-03-0322  
NBC Collective Protection: 1-83-03-0324

Description/Justification:

PIP 1-80-03-0309 - This Reliability Improvement of Selected Equipments (RISE) PIP results from low Mean Time Between Failure (MTBF) of the CHAPARRAL Air Compressor and its associated pneumatic system which results in excessive depot overhaul and requirements/cost. Selected items from the pneumatic system, as well as the compressor itself, will be improved or replaced with more suitable and reliable items. To the maximum extent possible, program will consist of improvements to existing items or replacement with items currently designed and in production.

PIP 1-83-03-0325 - This provides a safety improvement to the M121 smokeless motor by eliminating the use of asbestos in the motor case insulator. This product improvement also reduces motor production cost. The basis for this improvement is a requirement for DOD and OSHA to eliminate the use of chrysotile asbestos.

PIP 1-84-03-0326 - This provides for the repour of CHAPARRAL Missile Rocket Motors which exceed their shelf life with a smokeless propellant. The repour extends the field life of the CHAPARRAL missile. The smokeless rocket motor reduces missile signature when the CHAPARRAL fire unit engages targets.

PIP 1-80-03-0306 - The night capability improvement will enable the gunner to detect and engage aircraft during periods of darkness and limited visibility conditions. The Night Sight major components are a Forward Looking Infrared (FLIR) thermal imaging device, track optics, gunners TV display, autotrack subsystem and operator controls. The present system missiles have the capability to track and engage

2-32 January 1983

aircraft during darkness and limited visibility, but the system is presently limited by the necessity for the operator to visually detect and acquire aircraft for the missiles. The night sight will more than double the percent of a 24-hour day in which the system may operate.

PIP 1-82-03-0315 - This PIP will upgrade the CHAPARRAL Master Control Indicator Panel (MCIP) by installation of upgraded electric components, and the repackaging/rewiring of the panel. The modifications will provide improved system reliability/maintainability, thereby reducing system downtime and maintenance/repair costs.

PIP 1-82-03-0320 - The purpose of this improvement is to reduce the rear electronic compartment temperature by providing larger capacity blowers, improved ducting, and added baffles for better air circulation. High temperature in the electronics compartment has been a primary cause of equipment failure. This PIP will improve system operability/maintainability.

PIP 1-82-03-0322 - The Weapons Display Unit will provide the CHAPARRAL gunner required target cueing information. Rapid, accurate target cueing is required to allow the gunner to take advantage of the missiles forward engagement capability and to effectively use the Forward Looking Infrared (FLIR) Night Sight which allows the gunner to detect and track targets beyond visual range. The PIP will automatically superimpose target data from the Short Range Air Defense (SHORAD) Command and Control (C<sup>2</sup>) System onto the gunner FLIR TV display.

PIP 1-83-03-0324 - This PIP will provide protection to CHAPARRAL crew members in the event of a nuclear, biological, or chemical attack. There will be two separate protection systems, one for the gunner in the launching station and the second for the five crew members when they are in the vehicle cab.

2-33 January 1983

CHAPARRAL Guided Missile Intercept, Aerial MIM-72-A/C (Continued)

Scope of Program:

	FY 1982 & Prior Year		FY 1983 Current Year		FY 1984 Budget Year		FY 1985 Budget Year +1		Future Years		Total Program	
	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
<b>PIP 1-80-03-0309</b>												
MIPA	-	1.5	200	3.2	320	6.9	-	-	-	-	520	11.6
RDTE	-	-	-	-	-	-	-	-	-	-	-	-
OMA	-	1.1	-	.1	-	.5	-	2.5	-	2.3	-	6.5
<b>PIP 1-83-03-0325</b>												
MIPA	-	-	-	1.0	-	1.1	-	-	-	-	-	2.1
RDTE	-	-	-	-	-	-	-	-	-	-	-	-
OMA	-	-	-	-	-	-	-	-	-	-	-	-
<b>PIP 1-83-03-0326</b>												
MIPA	-	-	524	4.3	524	4.4	524	4.8	1572	15.5	3144	29.0
RDTE	-	-	-	-	-	-	-	-	-	-	-	-
OMA	-	-	-	-	-	-	-	-	-	-	-	-
<b>PIP 1-80-03-0306</b>												
MIPA	190	99.2	45	23.6	-	-	287	168.2	-	-	522	291.0
RDTE	-	15.8	-	-	-	-	-	-	-	-	-	15.8
OMA	-	-	-	.6	-	2.4	-	4.3	-	3.9	-	11.2
<b>PIP 1-82-03-0315</b>												
MIPA	-	-	-	-	-	-	520	3.7	-	-	520	3.7
RDTE	-	-	-	-	-	-	-	-	-	-	-	-
OMA	-	-	-	.4	-	1.3	-	-	-	1.2	-	2.9
<b>PIP 1-82-03-0320</b>												
MIPA	-	-	-	-	-	-	520	9.8	-	-	520	9.8
RDTE	-	-	-	-	-	-	-	-	-	-	-	-
OMA	-	-	-	.6	-	1.9	-	-	-	2.9	-	5.4

2-34 January 1983

CHAPARRAL Guided Missile Intercept, Aerial MIM-72-A/C (Continued)

FY 1982		FY 1983		FY 1984		FY 1985		Future		Total	
Prior Year		Current Year		Budget Year		Budget Year +1		Years		Program	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
<u>PIP 1-82-03-0322</u>											
MIPA	-	-	-	-	-	520	11.0	-	-	520	11.0
RDTE	-	-	1.3	-	3.9	-	-	-	-	-	5.2
OMA	-	-	-	-	-	-	-	-	1.5	-	1.5
<u>PIP 1-83-03-0324</u>											
MIPA	-	-	-	-	-	520	5.1	-	-	520	5.1
RDTE	-	-	1.7	-	1.7	-	-	-	-	-	3.4
OMA	-	-	-	-	-	-	-	-	1.3	-	1.3

Basis for Cost Estimate: Analytical and engineering techniques.

Method of Implementation: Field installation by contractor/government contract team.

2-35 January 1983

CHAPARRAL Guided Missile Intercept, Aerial MIM-72-A/C (Continued)

Development Status:

- PIP 1-80-03-0309 - Installation starts 1st Qtr FY 1984, and will be completed in 3rd Quarter, FY 1988.
- PIP 1-83-03-0325 - New Insulation being cut into existing contract for rocket motors.
- PIP 1-83-03-0326 - Inventory missile rocket motors being repoured with smokeless propellant upon self-life expiration.
- PIP 1-80-03-0306 - Installation starts in 1st Qtr FY 1984 and will be completed in the 4th Qtr, FY 1988.
- PIP 1-82-03-0315 - Installation starts in 1st Qtr FY 1988 and will be completed in the 4th Qtr, FY 1989.

2 - 36 January 1983

CHAPARRAL Guided Missile Intercept, Aerial MIM-72-A/C (Continued)

- PIP 1-82-03-0320 - New installation starts in FY 1988 and will be completed in FY 1989.
- PIP 1-82-03-0322 - New installation starts in FY 1986 and will be completed in FY 1989.
- PIP 1-83-03-0324 - New installation starts in FY 1986 and will be completed in FY 1986.

2-37 January 1983

MISSILE MODIFICATIONS  
( \$ in Millions )

Appropriation: Missile Procurement, Army

Missile Type: Improved HAWK (IHAWK)

Missile Modification Title:

Missile ECM Upgrade (MEU)/Multiple Blinking Jammer (MBJ) PIP 1-79-03-0119  
Phase III Product Improvements PIP 82-03-0140  
Collective Protection Equipment PIP 82-03-0138

Description/Justification:

PIP 1-79-03-0119 - The IHAWK system was designed against the expected ECM threat of the 1970s. The advancing ECM threat and the requirement to keep IHAWK viable into the late 1980s requires the missile performance to be upgraded. System analysis has identified missile upgrading improvements that are considered critical to the successful intercepts of high performance aircraft. The effort involves the design, development, testing, production and retrofitting modifications to the IHAWK missile. This improvements will increase the performance of the IHAWK missile in an advanced ECM environment.

PIP 82-03-0140 - Since last year's submission, PIPs 1-82-03-0130, 1-81-03-0131, 1-81-03-0132, 1-81-03-0134, and 1-81-03-0137 have been combined into one Phase III PIP. This PIP includes a fire power improvement called LASHE (Low Altitude Simultaneous HAWK Engagement). LASHE provides a significant capability against multiple pop-up targets and saturation raids. Also a micro-computer will replace the present analog Target Intercept Computer in the High Power Illuminator (HPI) radar to improve the IHAWK tracking radar's detection and tracking capabilities in an ECM environment. HPI reliability will also improve by approximately 21% by replacing vacuum tubes with solid state electronics. The Automatic Data Processor (ADP) located in the Improved Platoon Command Post (IPCP) will be replaced by a single drawer micro-computer with increased memory and throughput. This improvement provides the computational capacity to meet new system requirements, e.g., LASHE. An Integral Operator Trainer (IOT) will provide each IPCP with necessary software and hardware changes to permit training on a daily basis without interrupting or disconnecting equipment. The IOT eliminates the present AN/TPQ-29 trainer (one per battalion) with an attendant reduction in manpower and logistics support. The Improved Continuous Wave Acquisition Radar (ICWAR) detects and acquires low altitude targets. The ICWAR's transmitted waveform and processing of received signals will be modified to permit a more accurate and timely air picture to be sent to battalion and higher echelons of command and control.

2-38 January 1983

Improved HAWK (IHAWK) (Continued)

PIP 82-03-0138 - Protection against NBC agents will be provided by Collective Protection Equipment (CPE). CPE involves the protection to the IPCP interior against hazardous concentrations of nuclear, biological and chemical agents while providing clean filtered air. CPE will consist of a gas-particulate filter, a protective entrance, and an air conditioner. This improvement is essential for survival and mission accomplishment.

Scope of Program:

FY 1982 & Prior Years		FY 1983 Current Year		FY 1984 Budget Year		FY 1985 Budget Year +1		Future Years		Total Program	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
MIPA	50.4	0		17.7		25.1		0		93.2	
RDTE	24.6	7.6		0.6		0		0		32.8	
OMA	1.4	0		1.0		0.2		9.7		12.3	

Basis for Cost Estimate: Prior years based on firm fixed price contract. Current and future years based on engineering estimates.

Method of Implementation: At the time a missile is returned to the contractor's plant for normal replacement of expired shelf-life items and to undergo reliability restoration, the MRU/MBJ kits will be applied.

PIP 82-03-0140

MIPA	0	0	12.3	58.8	43.8	114.9
RDTE	29.4	27.4	27.3	14.2	0	98.3
OMA	0	0	0	3.3	23.8	27.1

Basis for Cost Estimate: Engineering estimates based on experience, contractor learning curve, and equivalency in complexity to items already developed, produced, and installed.

Method of Implementation: Phase III modification kits will be applied by contractor teams at Letterkenny Army Depot during equipment overhaul and at field locations.

2-39 January 1983

Improved HAWK (IHAWK) (Continued)

PIP 82-03-0138

FY 1982 & Prior Years		FY 1983 Current Year		FY 1984 Budget Year		FY 1985 Budget Year +1		Future Years		Total Program	
Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt	Qty	Amt
MIPA	0	0		2.0		3.6		1.1		6.7	
RDTE	0	3.0		2.9		0		0		5.9	
OMA	0	0		0		0.3		1.7		2.0	

Basis for Cost Estimate: Engineering estimates.

Method of Implementation: CPE kits will be applied by contractor teams in the field and at Letterkenny Army Depot.

Development Status:

PIP 1-79-03-0119

	(MEU)	(MBJ)
Development Contract	1QFY79	3QFY81
Initiate Testing	4QFY80	4QFY82
Procurement Contract	2QFY82	2QFY84
Initial Production Delivery	3QFY83	1QFY86
Complete Installation	4QFY85	4QFY87

PIP 82-03-0140

Development Contract	3QFY82
Initiate Testing	2QFY83
Procurement Contract	1QFY85
Initial Production Delivery	3QFY87
Complete Installation	1QFY89

2-40 January 1983

Improved HAWK (IHAWK) (Continued)

PIP 82-03-0138

Development Contract	4QFY83
Initiate Testing	1QFY84
Procurement Contract	3QFY85
Initial Production Delivery	3QFY87
Complete Installation	1QFY89

2-41 January 1983

**MISSILE MODIFICATION**  
(\$ in Millions)

**Appropriation:** Missile Procurement, Army

**Missile Type:** Forward Area Alerting Radar (FAAR)

**Missile Modification Title:** FAAR Automatic Processor

**Description/Justification:**

PIP 1-81-03-0714 - This modification replaces current FAAR analog signal processor with Digital system. The modification provides for more accurate and timely target aircraft data processing and provides for automatic data transmission to short range air defense systems. NOTE: PIP TERMINATED FUNDS WILL BE MOVED TO SHORT RANGE AIR DEFENSE (SHORAD) COMMAND AND CONTROL (C2) PROGRAM

**Development Status:**

<u>Event</u>	<u>PIP 1-81-03-0714</u>
Initiate Engineering Effort	2nd Qtr FY 82
Production Contract Award	1st Qtr FY 84
First Hardware Delivery	1st Qtr FY 85
Start Installation	2nd Qtr FY 85
Complete Installation	3rd Qtr FY 86

**Scope of Program**

	<u>FY 1982</u>		<u>FY 1983</u>		<u>FY 1984</u>		<u>FY 1985</u>		<u>Future Years</u>		<u>Total Program</u>	
	<u>Prior</u>		<u>Current</u>		<u>Budget</u>		<u>Budget</u>					
	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>
<b><u>PIP 1-79-03-3018</u></b>												
MIPA							92	26.4	113	31.5	205	57.9
RDTE					-	3.5	-	7.3	-	-	-	12.8
OMA					-	.1	-	-	-	.9	-	1.0

**Cost Estimate:** Project estimates and engineering techniques.

**Implementation:** Improvement will be retrofitted by material work orders to be applied worldwide by Army Depot teams.

2-42 January 1983

**MISSILE MODIFICATION**  
**(\$ in Millions)**

**Appropriation:** Missile Procurement, Army

**Missile Type:** TOW (BGM-71A, BGM-71C, BGM-71D, BTM-71A) (Heavy Antitank Guided Missile System).

**Missile Modification Title:**

TOW Missile System Improvements - PIP 1-79-03-3018

**Description/Justification:**

PIP 1-79-03-3018 - This modification provided Launcher guidance Systems improvements (FY 1982 program) and will provide guidance system hardening in FY 1983 and later years. Program results in an improved system capable of operating under conditions of EOCM and obscurants.

**Development Status:**

<b><u>Event</u></b>	<b><u>PIP 1-79-03-0318</u></b>
Initial Engineering Effort	2QFY79
Hardware Contract Award	2QFY80
First Hardware Delivery	1QFY81
Start Installation	3QFY81
Complete Installation	4QFY87

**Scope of Program:**

	<b><u>Prior Yrs</u></b>	<b><u>FY 1983</u></b>	<b><u>FY 1984</u></b>	<b><u>FY 1985</u></b>	<b><u>Future Years</u></b>	<b><u>Total Program</u></b>
	<b><u>Amt (\$M)</u></b>	<b><u>Amt (\$M)</u></b>	<b><u>Amt (\$M)</u></b>	<b><u>Amt (\$M)</u></b>	<b><u>Amt (\$M)</u></b>	<b><u>Amt (\$M)</u></b>
<b><u>PIP 1-79-03-3018</u></b>						
MIPA	220.3	57.7	72.5	35.6	23.1	409.2
RDTE	70.9	2.0	1.9	3.9	2.0	80.7
OMA	7.2	3.7	1.0	.8	1.8	14.5

**Basis for Cost Estimate:** Analytical and engineering techniques.

**Method of Implementation:** Installation by contractor and/or Government contact teams.  
2-43 January 1983

**MISSILE MODIFICATIONS**  
(\$ in Millions)

**Appropriation:** Missile Procurement, Army

**Missile Modification Title:** Modifications Less Than \$900,000

**Description/Justification:**

PIP 1-80-03-0705 - This FAAR modification provides redesigned electrical circuitry for the Support Maintenance Test Set (SMTS) system reliability, reduce logistics costs and increase safety.

**Development Status:**

<u>EVENT</u>	<u>PIP 1-80-03-0705</u>
Initiate Engineering Effort	1st Qtr FY 83
Production Contract Award	2nd Qtr FY 83
First Hardware Delivery	2nd Qtr FY 83
Start Installation	1st Qtr FY 85
Complete Installation	4th Qtr FY 85

**Scope of Program:**

<u>FY 1982 &amp; Prior Year</u>		<u>FY 1983 Current Year</u>		<u>FY 1984 Budget Year</u>		<u>FY 1985 Budget Year +1</u>		<u>Future Years</u>		<u>Total Program</u>	
<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>	<u>Qty</u>	<u>Amt</u>

**PIP 1-80-03-075**

MIPA	-	-	10	.3	21	.7	-	-	-	-	31	1.0
EDTE	-	-	-	-	-	-	-	-	-	-	-	-
OMA	-	-	-	.3	-	.2	-	.2	-	-	-	.7

**Cost Estimates:** Project estimates and Engineering techniques.

**Implementation:** Improvement will be retrofitted by material work orders to be applied worldwide by Army depot teams.

2-44 January 1983

**MISSILE MODIFICATION**  
 (\$ in Millions)

**Appropriation:** Missile Procurement, Army

**Missile Type:** Air Defense Command & Control System, AN/TSQ-73

**Missile Modification Title:**

C-MOS Computer Memory Improvement - PIP 1-79-03-1102

**Description/Justification:**

PIP 1-79-03-1102 - Provides additional memory capacity to the AN/TSQ-73 computer by replacing existing core memory with a Complementary Metallic Oxide Silicon (CMOS) chip. Additional memory capacity is required for interoperability with Patriot, IHAWK, and various NATO Command and Control Systems. The increase will be from 80000 to 32000+ bits.

**Development Status:**

**PIP 1-79-03-1102**

Initiate Engineering Effort	2QFY81
Development Contract Award	2QFY82
First Hardware Delivery	3QFY85
Start Installation	1QFY86
Complete Installation	4QFY86

**Scope of Program:**

<b><u>FY 1982 &amp; Prior Year</u></b>		<b><u>FY 1983 Current Year</u></b>		<b><u>FY 1984 Budget Year</u></b>		<b><u>FY 1985 Budget Year +1</u></b>		<b><u>Future Years</u></b>		<b><u>Total Program</u></b>	
<b><u>Qty</u></b>	<b><u>Amt</u></b>	<b><u>Qty</u></b>	<b><u>Amt</u></b>	<b><u>Qty</u></b>	<b><u>Amt</u></b>	<b><u>Qty</u></b>	<b><u>Amt</u></b>	<b><u>Qty</u></b>	<b><u>Amt</u></b>	<b><u>Qty</u></b>	<b><u>Amt</u></b>
MIPA				8	6.5	14	11.4	0	0	22	18.5
RDTE	3.8	1.0									4.8
OMA											

2-45 January 1983

TSQ73 (Continued)

Basis for Cost Estimate: Prices of similar devices used in computers currently being manufactured.

Method of Implementation: Field installation by depot team.

2-46 January 1983

MISSILE PROCUREMENT, ARMY

Appendix

Consultants, Studies and Analyses, and Management Support Contracts

Exhibit PB-21, Special Analysis

Narrative Justification,

2-47 January 1983

FY 1984  
PB-21, SPECIAL ANALYSIS  
CONSULTANTS, STUDIES AND ANALYSES  
AND MANAGEMENT SUPPORT CONTRACTS  
(DOLLARS IN THOUSANDS)

APPROPRIATION: MISSILE PROCUREMENT, ARMY

DATE: 1/31/83

	FY 1982	FY 1983	FY 1984
A. EXPERTS AND CONSULTANTS	-	-	-
1. PERSONNEL APPOINTMENTS	-	-	-
A. EXPERTS	-	-	-
B. CONSULTANTS	-	-	-
(1) FEDERAL ADVISORY COMMITTEE MEMBERS	-	-	-
(2) ALL OTHER APPOINTED CONSULTANTS	-	-	-
2. CONTRACT CONSULTANTS	-	-	-
B. CONTRACT STUDIES & ANALYSES	-	-	-
1. CONSULTING SERVICES	-	-	-
2. OTHER	-	-	-
C. PROFESSIONAL AND MANAGEMENT SERVICES BY CONTRACT	-	5,450	-
1. PROGRAM MANAGEMENT SUPPORT	-	5,450	-
A. CONSULTING SERVICES	-	-	-
B. OTHER	-	(5,450)	-
2. POLICY REVIEW AND DEVELOPMENT	-	-	-
A. CONSULTING SERVICES	-	-	-
B. OTHER	-	-	-
3. SPECIFICATION DEVELOPMENT	-	-	-
A. CONSULTING SERVICES	-	-	-
B. OTHER	-	-	-
4. SYSTEMS ENGINEERING	-	-	-
A. CONSULTING SERVICES	-	-	-
B. OTHER	-	-	-

2-48 January 1983

APPROPRIATION: MISSILE PROCUREMENT, ARMY

DATE: 1/31/83

	FY 1982	FY 1983	FY 1984
5. TECHNOLOGY SHARING/ UTILIZATION	-	-	-
A. CONSULTING SERVICES	-	-	-
B. OTHER	-	-	-
6. LOGISTIC SUPPORT SERVICES	-	-	-
A. CONSULTING SERVICES	-	-	-
B. OTHER	-	-	-
7. TECHNICAL DATA COLLECTION	-	-	-
A. CONSULTING SERVICES	-	-	-
B. OTHER	-	-	-
8. PUBLIC RELATIONS AND ADVERTISING	-	-	-
A. CONSULTING SERVICES	-	-	-
B. OTHER	-	-	-
9. OTHER PROFESSIONAL AND MANAGEMENT SERVICES BY CONTRACT	-	-	-
A. CONSULTING SERVICES	-	-	-
B. OTHER	-	-	-
D. CONTRACT ENGINEERING TECHNICAL SERVICES (CETS)	-	-	-
1. CONTRACT PLANT SERVICES	-	-	-
2. CONTRACT FIELD SERVICES	-	-	-
3. FIELD SERVICE REPRESENTATIVES	-	-	-
TOTAL	-	5,450	-

2-49 January 1983

APPROPRIATION: MISSILE PROCUREMENT, ARMY

DATE: 1/31/83

	FY 1982	FY 1983	FY 1984
E. SUMMARY			
1. PERSONAL SERVICES CONTRACTS	-	-	-
2. CONTRACT CONSULTING SERVICES	-	-	-
3. OTHER CONTRACT SERVICES	-	5,450	-
4. PERSONNEL APPOINTMENTS	-	-	-
TOTAL	<u>-</u>	<u>5,450</u>	<u>-</u>

2-50 January 1983

Missile Procurement, Army  
Narrative Justification  
Consultants, Studies and Analyses  
and Management Support Contracts

Professional and Management Services

- Funds provide an independent means of validating and verifying the computer software developed by the prime contractor of the Patriot, and cost effective method of determining the weapon system effectiveness. Without this contractual support there would be no independent means of determining the suitability of the computer software prior to its incorporation into the weapon system. Failure to determine this suitability could result in system failure. This is a one time requirement.

FY82

FY83  
\$5450

FY84

2-51 January 1983

DATE  
LMEI  
8